

From boatanchors@theporch.com Wed Mar 29 12:31:37 1995  
Date: Wed, 29 Mar 1995 08:35:15 -0600  
Message-Id: <"Macintosh \*/PRMD=MOT/ADMD=MOT/C=US/"@MHS>  
From: Scott\_Johnson-AZAX60@email.sps.mot.com  
Subject: RE>6L6 Look-alikes

Reply to: RE>6L6 Look-alikes  
Don't forget the ones on VGH (valve growth hormone) the 6550, 8417, KT-88, and KT-90.

-----  
Date: 3/28/95 5:41 PM

There's also the 6W6, 6Y6. In addition, although the plates don't look exactly like the 6L6, there's the 7027 and 5881 which are electrically similar.

From boatanchors@theporch.com Thu Mar 30 01:35:11 1995  
Date: Wed, 29 Mar 1995 21:48:13 -0600  
Message-Id: <Chameleon.4.01.2.950329222431.jproc@>  
From: jproc@worldlinx.com  
Subject: 83A Tube

Dear BA's,

Many thanks to all of you that responded to the 83A tube question. The general consensus was:

- 1) That it's a mercury vapour rectifier.
- 2) That the blue glow between the filament and plate is normal.

I will pass on that information to the party with the faulty tube tester.

-----  
Jerry Proc VE3FAB  
E-mail: jproc@worldlinx.com  
Radio Restoration Volunteer  
HMCS Haida Toronto, Ontario  
-----

From boatanchors@theporch.com Wed Mar 29 20:21:46 1995  
Date: Wed, 29 Mar 1995 16:29:12 -0600  
Message-Id: <"Macintosh \*/PRMD=MOT/ADMD=MOT/C=US/"@MHS>  
From: Scott\_Johnson-AZAX60@email.sps.mot.com  
Subject: BC-640 Manual

Subject: Time: 1:49 PM  
OFFICE MEMO BC-640 Manual Date: 3/29/95  
Anyone out there have a tech manual for a BC-640 VHF transmitter?  
73, Scott

From boatanchors@theporch.com Wed Mar 29 02:31:14 1995  
Date: Tue, 28 Mar 1995 22:30:39 -0600  
Message-Id: < Pine.3.89.9503282034.A20895-0100000@netcom12>  
From: paul Veltman <veltman@netcom.com>  
Subject: Re: Beer Bottle Tubes

Gang,  
In the manufacture of tubes, there was a small piece of filament called a "getter" that was installed in the tube. When the vacuum pump was finished, the getter was fired off, and that removed the last of the oxygen in the bottle.

73

Paul WA6OKQ

From boatanchors@theporch.com Wed Mar 29 12:44:30 1995  
Date: Wed, 29 Mar 1995 08:38:12 -0600  
Message-Id: <m0rtypu-000uHsC@twisto.eng.hou.compaq.com>  
From: Dave=Sharp%Legal%Corp=Hou@bangate.compaq.com  
Subject: re: Beer Bottle Tubes

I think Deeter has had a little too much of the contents of the "toobz" he's attempting to make.

Time to spend a wee bit more time in CLASS.

Dave

From boatanchors@theporch.com Wed Mar 29 14:40:46 1995  
Date: Wed, 29 Mar 1995 08:10:02 -0600

Message-Id: <9503291408.AA09734@speckle.ncsl.nist.gov>  
From: morgan@speckle.ncsl.nist.gov (Roy Morgan)  
Subject: Re: Beer Bottle Tubes

><QUOTED VERBATIM TEXT FOLLOWS>

> ...

>Subject: Tubes.

AWRIGHT! NOW you've done it! Here I thought I had a handle on my projects, was getting at least some of them done, and you go and post the article on homemade tubes.

There's nothing else for me to do. I've simply got to get on with it. I've drawn up a list of things I'll need, and if you want to assume any responsibility for what you've done, you'll help me find them:

Two 55 gallon steel drums.

If I cut the bottom out of one, and weld them together, I should have a boiling vessel big enough. It'll be about 6 feet tall, right?

One welding outfit.

I'll need this to weld the drums, and to make up any incidental fixtures I need.

About 100 gallons of heavy water.

This is the stuff they have in nuclear reactors and such. I figure that if it's "heavy" (whatever that is - physics, I think) it will hold more heat, and so will be capable of pushing more of the "air" out. I do know a fellow who works around the reactor here. He's a PhD Radiation Physicist. He should have some.

A gallon of high temperature epoxy.

I'll use this to seal off the openings once all the air is out.

What's this all for, you ask? Well, I'd hoped to keep it quiet, but I have a ... um... "problem" with gas. It's especially after eating kilbasa with mustard and boiled cabbage. (I especially like the mustard.)

So you see, I figured that this method would certainly eliminate at least as much air as in a vacuum tube, and then I'd be more comfortable and able to finish all the rest of my projects.

First things first, you know.

P.S. Tell me what you all think. Is it feasible?

--  
Roy --

Roy Morgan / Tech A-266 / NIST / Gaithersburg MD 20899  
(National Institute of Standards and Technology, formerly NBS)  
301-975-3254 Fax: 301-948-6213 Internet: morgan@speckle.ncsl.nist.gov

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From boatanchors@theporch.com Wed Mar 29 01:39:30 1995  
Date: Tue, 28 Mar 1995 21:07:37 -0600  
Message-Id: <"Macintosh \*/PRMD=MOT/ADMD=MOT/C=US/"@MHS>  
From: Don\_Burns-EPUR01@email.mot.com  
Subject: Central Electronics 20A

I'm looking for a Central Electronics Model 20A with VFO, working and in good shape. Anyone in BA land got a handle on one???

Am also looking for a frequency counter that will take me from 10 kHz up to about 100 mHz. BA counters probably do not have the time base stability I want, and the real old one's ..... well they probably truly deserve the title BA. There are a few portable counters on the market that sell in the \$250 range. Anyone have a recommendation and help me avoid spending my annual income? Saw a cute little counter at radio shack tonight but it won't run well below 1 mHz. Suggestions anyone? And don't forget that 20A! (My first sideband exciter as a kid was a 10B.)

--

Don Burns K4GHD <epur01@email.mot.com>  
Plantation, FL

From boatanchors@theporch.com Wed Mar 29 14:02:47 1995  
Date: Wed, 29 Mar 1995 09:20:58 -0600  
Message-Id: <199503291520.JAA12246@uro.theporch.com>  
From: "Stephen M. Linscott" <LINSCOT@ricevm1.rice.edu>  
Subject: Re: Central Electronics 20A

Don -

It's hard to beat an HP 5245L or M, with the 500 MHz plug-in. It is very stable, and won't go crazy with complex waveforms. I have seen them as low as \$25.00 w/o the plug-in, but I think Tucker has them for \$250.00 with plug-in. The base unit goes to 50 MHz, has 8 Nixie TUBES, and by measuring period instead of frequency will go into the milli-Hz range. The M version has a higher stability time-base, but the standard one in the L is no slouch!

\*\*\*\*\*  
\* Steve Linscott, Divisional Consultant - Natural Sciences \*  
\* IS User Services Rice University, Houston, Texas \*  
\*\*\*\*\*

From boatanchors@theporch.com Wed Mar 29 06:36:14 1995  
Date: Wed, 29 Mar 1995 02:23:21 -0600  
Message-Id: <199503290819.AAA00812@netcom17.netcom.com>  
From: rmccarty@netcom.com (roger mccarty)  
Subject: Chassis Cleaning?

Hello Anchorites,

Does someone have a favored way to clean a chassis? I completely re-conditioned a Viking II chassis by removing everything off the top and then re-building it but on a Ranger I am working on now, I have to remove too many under chassis pieces to get the top cleared. It has occurred to me that simply "hosing" it down may be an alternative, but thought I'd pose the question to the group first.

Any suggestions?

Thanks  
Roger KD6CC

From boatanchors@theporch.com Wed Mar 29 13:08:43 1995  
Date: Wed, 29 Mar 1995 08:32:19 -0600  
Message-Id: <9503291431.AA19466@cushy.eecs.nwu.edu>  
From: flasch@cushy.eecs.nwu.edu (Norm Flasch)  
Subject: Re: Chassis Cleaning?

>  
> Hello Anchorites,  
>  
> Does someone have a favored way to clean a chassis? I completely  
> re-conditioned a Viking II chassis by removing everything off the top and  
> then re-building it but on a Ranger I am working on now, I have to remove  
> too many under chassis pieces to get the top cleared. It has occurred to  
> me that simply "hosing" it down may be an alternative, but thought I'd  
> pose the question to the group first.  
>  
> Any suggestions?  
>  
> Thanks  
> Roger KD6CC  
>  
Well, my brother works for a company that makes surface finishing

equipment. Some of the metals that they polish corrode very quickly when exposed to moisture. What he does to clean these just finished metals is hose them down with water. Then immediately, he uses a spray bottle of alcohol on the metal part. He tells me that the alcohol displaces the water instantly and the metal does not corrode. I have not tested this yet, but will next time I get a really grungy chassis. My only concern is getting water in the transformers.

--

Norm Flasch flasch@eeecs.nwu.edu Northwestern University  
Electrical Engineering and Computer Science

From boatanchors@theporch.com Wed Mar 29 14:37:55 1995

Date: Wed, 29 Mar 1995 09:46:32 -0600

Message-Id: <Pine.3.89.9503290941.A14065-0100000@ozarks>

From: "C. Frank Gilmore" <fgilmore@ozarks.sgcl.lib.mo.us>

Subject: Re: Chassis Cleaning?

On Wed, 29 Mar 1995, roger mccarty wrote:

```
> Hello Anchorites,  
>  
> Does someone have a favored way to clean a chassis? I completely  
> re-conditioned a Viking II chassis by removing everything off the top and  
> then re-building it but on a Ranger I am working on now, I have to remove  
> too many under chassis pieces to get the top cleared. It has occurred to  
> me that simply "hosing" it down may be an alternative, but thought I'd  
> pose the question to the group first.  
>  
> Any suggestions?  
>  
> Thanks  
> Roger KD6CC  
>  
>
```

A fellow that used to be an expert at restoration, now a silent key, had a technique using a compressed air driven air brush like artists use. He used various combinations of very fine grit and/or chemicals. I regret I did not learn his skills when he was around. I saw many examples of his work and it was beautiful. I gave him a very corroded SX-101 that had set on my store shelf for three years and I had finally drug home. People would lift the lid and run. It worked as well as SX-101 receivers work but was so bad topside that you would swear it had been in salt water.

..

He spent a couple of weeks on it and then brought it by to show me. I

was completely amazed to say the least. I had told him it was beyond reclaiming but he sure proved me wrong.

de K0JPJ ex-W5PVX . . . -

From boatanchors@theporch.com Wed Mar 29 20:38:58 1995  
Date: Wed, 29 Mar 1995 16:24:45 -0600  
Message-Id: <"Macintosh \*/PRMD=MOT/ADMD=MOT/C=US/"@MHS>  
From: William\_Sievers-LWS005@email.mot.com  
Subject: Collins 51J3/4 Oldham Coupler

Does anyone out there know the Collins p/n (3x4x3) for the Oldham coupler used in the 51J3, J4 receivers? I know the Signal Corps. stock number (out of the R-388 manual), but have never been able to find (even with Collins help) the p/n for this coupler. Someone once told me there was a conversion chart which converted the old Signal Corp. p/n's and/or National Stock Numbers to the Collins numbers, but like flying saucers, the real thing never materializes. Another item of similar nature is the front panel rack handles.

Thanks,  
Bill  
KC1HP

From boatanchors@theporch.com Wed Mar 29 02:46:21 1995  
Date: Tue, 28 Mar 1995 22:42:14 -0600  
Message-Id: <9503290437.AA23543@medusa.csn.net>  
From: scottt@csn.net (Scott Turner)  
Subject: Re: Drake equipment

>Am in close agreement on those prices except for the amp and xcvr. If >the finals are good in the amp and it is clean it would bring \$600-\$700. >I paid the highest price for an L4B yet last year at \$725. It was just >retubed and flawless. I had got some in previous years as low as \$500 >that were not too shabby. The digital mode folk (like me) are finding >they are excellent for the mode and easy to QSK with either PINs or >vacume relays.

And I'm in agreement with Frank. A good L4B is a fine amp and does command a fairly healthy price. If I found a good one for \$400-\$500 I'd probably jump at it myself! A \$400 L4B would have to be fairly rough.

>I would go lower on the TR4 unless it was a TR-4CW. Sold a very nice TR-4C >for \$275 not long ago. Am making the assumption the AC-4 power supply is in- >cluded.

Again, agreed. A straight TR4 in good condition would probably be more in the \$200 range with AC4 PS and speaker included. In this case with the RV4 (that's a V not a B), the combination of TR4, RV4 and AC-4 PS would likely be saleable in the \$300 total range.

BTW, I'd be happy to offer the lady \$100 for the RV4, but frankly I'd recommend that she try to sell the TR4 and the RV4 together as a matched set. (And I'd really, really like an RV4 to go with my TR4!)

>Your right about the MN-2000. I have the original new one I bought in '69 >plus two more and with all the tuners I have owned or used it ranks at >the top. I saw one with a scratched meter face bring \$200 at a hamfest >last fall.

Indeed. The MN-2000 is a very nice solid matching network that matches the rest of the Drake gear. On the other hand, it does \*not\* cover 160 and \$150 is probably closer to the average. I bought an absolutely mint one for a bit less than that at a recent fest.

Scott Turner KG0MR scott@hpisla.lvld.hp.com or scottt@csn.net

From boatanchors@theporch.com Thu Mar 30 00:41:48 1995

Date: Wed, 29 Mar 1995 20:43:57 -0600

Message-Id: <9503291410.0JWVW00@24stex.com>

From: michael.moore@24stex.com

Subject: FAVORITE RADIOS

J0>The BC-342 is similar to the -348. It covers 1.5 - 18 Mc. One thing that is J0>good about it is that it runs off 110 AC (with the RA-20 power supply). It J0>was used with the BC-610 in various ground configurations. There was a LF J0>version the BC-344, and 12 VDC versions of each, the BC-312 and BC-314, J0>respectively.

J0>I like it because it is not a common as the -348.

J0>Joseph Pinner +

J0>KC5IJD

When I was in high school, and shortly after getting my novice (1956), I joined Air Force Mars. After a year or so I had accumulated an awful lot of points. When I received notice that I could 'spend' them at an A.F. sale I jumped at the chance. Although we got there at five minutes after Eight in the A.M. all the good stuff (Collins) was already gone. How could those A.F. officers get there and out with their radios so fast (BG). I settled for 5 Dumont scopes (304 or 305's, I think) and 4 BC-342-N receivers. Used one on six-meters with a Tapetone XC-51-N converter. Very hot combo. Would really like to find another 342-N.

What is street value for one now-a-days??? Also would like a 344.

Mike....K6SQJ  
michael.moore@24stex.com

From boatanchors@theporch.com Thu Mar 30 00:09:35 1995  
Date: Wed, 29 Mar 1995 20:27:58 -0600  
Message-Id: <Pine.SUN.3.91.950330122355.12174B-100000@eram.esi.com.au>  
From: Dave Horsfall <dave@esi.com.au>  
Subject: Re: HRO lives!

On Tue, 28 Mar 1995, Roberta J. Barmore wrote:

> IF alignment seems to have held fairly well; the RF amps and mixer  
> appear to be off on several coils, and thus a question: where can I find a  
> long enough alignment tool that'll provide enough torque to tweak them?  
> :) The bandspread RFs seem the farthest off.

A plastic knitting needle, with the end ground to the right size?

--  
Dave Horsfall (VK2KFU) | dave@esi.com.au | VK2KFU @ VK2AAB.NSW.AUS.OC | PGP 2.6  
Opinions expressed are mine. | E7 FE 97 88 E5 02 3C AE 9C 8C 54 5B 9A D4 A0 CD

From boatanchors@theporch.com Wed Mar 29 22:38:46 1995  
Date: Wed, 29 Mar 1995 18:45:31 -0600  
Message-Id: <199503300043.AA00501@cameron.geom.umn.edu>  
From: "penson" <penson@geom.umn.edu>  
Subject: Re: HW 102 Manual needed

Paul:

There was no HW-102. Could you mean the HW-101?

Chuck

From boatanchors@theporch.com Wed Mar 29 20:11:55 1995  
Date: Wed, 29 Mar 1995 15:42:50 -0600  
Message-Id: <Pine.SUN.3.91.950327151639.16167C-100000@ncrsun7>  
From: Kevin Anderson <anderson@ncrsun7.ncr.usace.army.mil>  
Subject: Locating Jim Kearman KR1S

KR1S was big on this list for awhile....

Does anyone on this list happen to know where Jim Kearman, KR1S, has landed after he left ARRL HQ? He had an alternate e-mail address, but I can't remember what it was or know

whether he would even be reading it if he doesn't have access to a service.

Just asking. Thanks. Cheers/73 Kevin, KB9IUA/AG

\*  
Kevin L. Anderson, CENCR-PD-W, U.S. Army Corps of Engineers  
Rock Island District Office, Planning Div.-Waterway Systems  
Rock Island, Illinois 61204-2004, USA phone:(309) 794-5586  
e-mail: anderson@ncrsun1.ncr.usace.army.mil

\*  
Opinions expressed here are my own and do not represent the  
U.S. Army Corps of Engineers or the Federal Government.

From boatanchors@theporch.com Wed Mar 29 04:06:01 1995

Date: Tue, 28 Mar 1995 23:57:34 -0600

Message-Id: <199503290554.VAA14706@hobbes.UCSC.EDU>

From: haynes@cats.ucsc.edu (Jim Haynes)

Subject: making your own tubes

Seems like I remember a story from way back about a poverty-stricken youth who made all his own radio gear, including tubes; but I wouldn't know where to begin to find it.

The following occurred to me this afternoon as maybe an interesting experiment. You've got a dual-filament light bulb, such as a car taillight/stoplight bulb. When one of the filaments burns out you've got a diode of some kind. I guess it's nitrogen filled rather than vacuum, so it must be a strange kind of diode.

From boatanchors@theporch.com Wed Mar 29 14:31:16 1995

Date: Wed, 29 Mar 1995 10:06:45 -0600

Message-Id: <9503291606.AA82168@acs6.acs.ucalgary.ca>

From: "Deane D McIntyre" <dmcintyr@acs.ucalgary.ca>

Subject: Re: making your own tubes

In message <199503290554.VAA14706@hobbes.UCSC.EDU> writes:

> Seems like I remember a story from way back about a poverty-stricken youth  
> who made all his own radio gear, including tubes; but I wouldn't know  
> where to begin to find it.  
>

I believe that thos story is in the book "200 metres and down" by de Soto (?) published by the ARRL in 1936. This book describes the history of ham radio (and the ARRL) up to that point. Must reading for anyone interested in BA's and/or radio history. The good news is that the ARRL reprinted it in the 80's and it is still available from the ARRL.

I will see if I can locate my copy and will report back as to how he made his firebottles. Seem to recall that he used light bulb filaments for (what else) filaments, and made a home brew mercury diffusion pump to pump the bottles down. Also seem to recall that his station could operate AM as well as CW. This was in the 1920's I believe.

73, Deane D McIntyre VE6BPO  
dm McIntyre@acs.ucalgary.ca

From boatanchors@theporch.com Wed Mar 29 17:33:07 1995  
Date: Wed, 29 Mar 1995 13:12:03 -0600  
Message-Id: <9503291901.AA25796@uvs1.orl.mmc.com>  
From: padgett@tccslr.dnet.mmc.com (A. Padgett Peterson, P.E. Information Security)  
Subject: RE: making your own tubes

>The following occurred to me this afternoon as maybe an interesting >experiment. You've got a dual-filament light bulb, such as a car >taillight/stoplight bulb. When one of the filaments burns out you've >got a diode of some kind. I guess it's nitrogen filled rather than >vacuum, so it must be a strange kind of diode.

Whyfor ? True you have two elements in the bulb and a heated gas but the elements are the same. My understanding of the diode effect is that the two elements in a diode are of dissimilar metals that have unidirectional current flow characteristics when excited.

Now years ago while working at GM, I did design a single wire (copper was getting expensive), pulse width modulated, diode steered, ac system to handle the tail/stop/turn-signal lamp functions for an automobile, but the bulbs just lit & were not otherwise active devices.

Warmly,  
Padgett

From boatanchors@theporch.com Wed Mar 29 02:08:02 1995  
Date: Tue, 28 Mar 1995 21:46:39 -0600  
Message-Id: <950328223723\_64463844@aol.com>  
From: KD0HG@aol.com  
Subject: More toobes

I remember reading a sci-fi book in the 50s where the USA moon base used gigantic vacuum tubes set up on the ground to power their "powerful moon-to-earth transmitters". No bottles necessary, you could make them 100' tall if you wanted and if a filament burnt out, no problemo. Couldn't build giant mercury vapor rectifiers, tho. Wonder where they go their HV DC?

From boatanchors@theporch.com Wed Mar 29 11:13:13 1995  
Date: Wed, 29 Mar 1995 07:13:59 -0600  
Message-Id: <Pine.3.89.9503290744.C279-0100000@indy2>  
From: "Roberta J. Barmore" <rbarmore@indynet.indy.net>  
Subject: Re: More toobes

A gracious "good afternoon!"

On Tue, 28 Mar 1995 KD0HG@aol.com wrote:

> I remember reading a sci-fi book in the 50s where the USA moon base used  
> gigantic vacuum tubes [...]. No bottles necessary [...]. Couldn't build  
> giant mercury vapor rectifiers, tho. Wonder where they go their HV DC?

Oh, I cannot resist! \*Selenium\* rectifiers, naturally! <snicker>

But, seriously...there's nothing \*wrong\* with plain-ol vacuum  
rectifiers, \*especially\* if size is no object. Mercury vapor (help me  
here) allows greater current for a given size and lower drop/source  
impedance, I seem to recall, but it's less than optimum for many reasons  
(RF hash, warm-up time and the rare reverse-poling with age being the  
main ones).

A bigger question: where were they getting the AC to rectify?  
Pre-solar cell space tech classically used a solar-powered "steam" engine,  
usually with an exotic working fluid; might as well carry along some DC  
generators and get the HV the easy way! :) Or, since you can get some  
serious temperature differentials when the sun's up, a \*huge\* collection  
of thermopiles.... <shudder>

73,

--Bobbi

(Who has the whole hardbound collection of "Space Travel" books  
illustrated by Chesley Bonestell, written by Ley and von Braun and based  
on articles in "Collier's" magazine).

From boatanchors@theporch.com Wed Mar 29 18:18:19 1995  
Date: Wed, 29 Mar 1995 13:52:20 -0600  
Message-Id: <9503291947.AA26078@uvs1.orl.mmc.com>  
From: padgett@tccslr.dnet.mmc.com (A. Padgett Peterson, P.E. Information Security)  
Subject: Re: More toobes

On Tue, 28 Mar 1995 KD0HG@aol.com wrote:

> I remember reading a sci-fi book in the 50s where the USA moon base used  
> gigantic vacuum tubes [...]. No bottles necessary [...]. Couldn't build  
> giant mercury vapor rectifiers, tho. Wonder where they go their HV DC?

I always liked the image of DeKalb toobs with their external plate leads

waving in the ether 8\*).

Warmly,  
Padgett

From boatanchors@theporch.com Wed Mar 29 20:25:45 1995  
Date: Wed, 29 Mar 1995 16:11:29 -0600  
Message-Id: <9503291525.AA12819@willow.sps.mot.com>  
From: zoom@willow.sps.mot.com (Chris Terwilliger)  
Subject: msg for teri

about the HQ-129X speaker, please call or email me again.  
I was wrong about grill and lost your address.  
Chris  
zoom@willow.sps.mot.com  
602-413-5362

From boatanchors@theporch.com Wed Mar 29 18:41:51 1995  
Date: Wed, 29 Mar 1995 14:04:01 -0600  
Message-Id: <9503291202.ZM16227@mechcad3.engr.sgi.com>  
From: "Mark Glusker" <glusk@mechcad3.engr.sgi.com>  
Subject: R390A disassembly notes

Since I have recently had the dubious honor of removing the front panel and RF module of an R390A more times than I care to recall, I thought I would write a few random notes about the experience before I forget them. I hope this is of some help. If you get into the disassembly of the RF module geartrain itself, that is another story entirely. I'll try to write that up when I get a chance.

- It helps to support the radio chassis about 2" above the tabletop to allow the front panel to fold down onto the table without stressing the wiring harness too much.

- You'll need a Bristol spline wrench and a \*long\* (~8") Phillips head screwdriver.

- In my opinion, the best first step if you are removing the RF module is to remove the VFO. First of all, turn the KC knob until "+000" shows on the counter. From the top of the radio, undo the connector on the RF module for the VFO and feed the cable and connector through the hole in the chassis. Turn the radio over and remove the spring on the coupler at the front of the VFO shaft (may be missing - if so, don't worry). Remove the two frontmost green headed screws holding in the VFO. Instead of removing the single green headed screw at the back of the VFO, remove the two normal screws holding the VFO bracket to the chassis itself (you'll see what I mean when you get there). These screws are not captive, so be sure to catch them when they are fully unscrewed. Now you can slide the VFO directly towards the back of the radio without losing the

synchronization with the RF module. The center disk of the shaft coupler will be loose at this point - be sure not to lose it! Don't turn the VFO shaft more than about 1/8 turn. If you leave it unturned, it will slide back in again when you are done without needing any special synchronization (except tuning the RF module to +000 on the counter). If you do turn the shaft, you can always reset it if you have a frequency counter. The +000 setting corresponds to a VFO frequency of 2455 kc.

- Remove the front panel - the manual shows which screws to remove (eight large, five small, the MC, KC and ANT TRIM knobs and their panel bushings)

- Undo all the RF module screws (three on right outside face of chassis, two on vertical chassis divider just in front of the audio module, one on the front faceplate of the RF module, two in the very back of the RF module and finally two in the back of the Crystal Oscillator subchassis).

The RF module lifts directly upward to remove - make sure you are pulling on something solid, not one of the slug racks!

- To reinstall, reverse the procedure. Be careful not to damage the spring fingers on the chassis under the RF module. Reinstall the VFO with the counter on the RF module reading "+000", don't forget the Oldham coupler disk.

- When reinstalling the front panel, don't forget to install the panel bushings on the KC, MC and ANT TRIM shafts first. Make sure the ZERO ADJ mechanism is fully unscrewed! Also, watch out for the position of the DIAL LOCK mechanism as you are positioning the panel. You may opt to loosen this mechanism and reposition it while installing the panel, if so, make sure you position it correctly again before tightening any of the front panel screws. Tighten all the screws, then tighten the panel bushings. I didn't tighten the bushings too much, since they tend to "walk" around the hole as you tighten them, putting sideways loading on the shafts. I made them finger tight + a \*tiny\* bit extra.

- You might want to double check that none of the wiring is interfering with the counter. This is a sure way to screw up the painted numbers on the counter wheels. This is a particular problem if you remove just the black surround to the counter window - the wires need to be carefully tucked back into place as you reassemble the surround to the front panel.

- One source of tuning roughness can be the counter mechanism. On one R390A I disassembled, the small bevel gear at the right side of the counter was rubbing against the counter housing. Loosening the gear clamp and sliding it away from the housing a tiny amount made a big improvement in the smoothness of the kilocycle tuning.

From boatanchors@theporch.com Wed Mar 29 14:35:46 1995

Date: Wed, 29 Mar 1995 09:56:45 -0600

Message-Id: <9503272352.AA06882@ihurry.ih.att.com>

From: Michael.J.Knudsen@att.com

Subject: R390A Product Detector Mods

To: boatanchors@theporch.com knudsen

Over the weekend I pulled my R390A's IF subchassis and started fixing some problems. I found it was made by Motorola -- at last, a name I can respect on this set!

The existing prod detector modification uses a relay to break the audio feed coming right out of the diode AM detector, and substitutes the signal from the 6BE6 (was 6BA6) plate at that point. This breaks the diode load circuit and prevents the noise limiter from working.

I'm considering moving the audio switchover point down the circuit a ways, beyond the two equal resistors that set the limiter thresholds and the audio signal is finally isolated from the DC by a blocking capacitor. That should let the limiter keep working.

Also I need to get the prod det output level to better match the diode's AM output. Right now the BFO is weaker. The previous owner had to cut back on the RF feed to the 6BE6's signal grid to avoid overload distortion in that tube. I'm thinking of increasing the plate load resistor, or substituting a choke for impedance coupling, using a small audio output transformer primary.

It's hard to experiment, since the BFO / detector tube is buried under the fancy PTO BFO coil. The previous owner seems to have tacked the mod circuit in without removing that coil! So I can't even see what plate load resistor value he used. I may have to bite the bullet and pull that PTO can.

BTW, I found that 5/64" ball-end Allen wrench works fine on the spline set screw in the BFO Pitch shaft coupler, and on the small knobs. I do need to call the place someone recommend for a real spline wrench, tho. No such beast at any local hardware store.

Anyway, I'd appreciate any advice on the mods. Including whether it was even worthwhile in the first place -- since the R390A taps the AGC off separately from the AM diode detector, you could already use AGC with the BFO on an unmodified set.

Any ideas where I can get a replacement relay? SPDT, must switch on a couple of mA. The present one just can't be made to work. I seem to remember RatShack having such a beast, once.

BTW, I missed Digests 103 and 107, where 107 may have had responses to my eariler queries on the prod det mods. Sorry if anyone posted something and I'm asking again.

I really do enjoy this rcvr once again -- great for cruising SSB bands, and not bad for AM shortwave either. THanks, mike k.

From boatanchors@theporch.com Wed Mar 29 16:52:51 1995  
Date: Wed, 29 Mar 1995 12:19:45 -0600  
Message-Id: <01HOPHWKBJKIE7ZU70@tnitech.edu>  
From: cfm5723@tnitech.edu (Conard Murray)  
Subject: RT-256/UPX-6 whatzit?

Hello all! I was given a RT256/UPX6 in the transit case that looks like new. It even has all the spare fuses and bristo wrenches! This beast even plugs right into 110/60Hz! The only problem is that it appears to be absolutely useless. Does anyone know what it is and if there is a practical (or impractical) use for it? Anybody want to trade something for it? I wonder if it has any of those self-destruct charges in it ... it's getting close to the fourth of July :-)

thanks and 73 de Conard WS4S

From boatanchors@theporch.com Wed Mar 29 18:56:00 1995  
Date: Wed, 29 Mar 1995 14:10:50 -0600  
Message-Id: <2F79DA98@MSMGATE.TRACOR.COM>  
From: "Kasprzyk, Emil" <EFK@eng2.tracor.com>  
Subject: RE: RT-256/UPX-6 whatzit?

This is still used with heavy ground aircraft control & warning radar sites. It is a radar transponder for IFF/SIF (identification friend or foe, with selective indentification feature). This now also gets altitutude information from aircraft. This set operates slightly above 1 gHz. Uses 2C39 type tubes in cavities. Has possible uses on 1.2 gHz. band. The unit talks to the APX-6 or others in the aircraft.

Emil F. Kasprzyk KC5IZ, ex UPX-6 technician

-----  
>From: boatanchors  
To: Multiple recipients of list  
Subject: RT-256/UPX-6 whatzit?  
Date: Wednesday, March 29, 1995 12:19PM

Hello all! I was given a RT256/UPX6 in the transit case that looks like new. It even has all the spare fuses and bristo wrenches!

This beast even plugs right into 110/60Hz! The only problem is that it appears to be absolutely useless. Does anyone know what it is and if there is a practical (or impractical) use for it? Anybody want to trade something for it? I wonder if it has any of those self-destruct charges in it ... it's getting close to the fourth of July :-)

thanks and 73 de Conard WS4S

From boatanchors@theporch.com Wed Mar 29 02:31:10 1995

Date: Tue, 28 Mar 1995 22:23:47 -0600

Message-Id: <01H00QIN3LNG8Y6VAZ@delphi.com>

From: DUBE2@delphi.com

Subject: SB-102

I used a '102 for several years after I got back on the air. I loved the radio and am now sorry I parted with it. However, it had a problem with frequency stability in the LMO, and this may be the same type of problem that was causing the "cutout" problem. If so, here's the fix!

Carefully remove the whole LMO from the radio. Remove the side panels so that you can get access to the tuning capacitor. The problem of stability originates with a poor ground connection between the cap rotor shaft and the bronze (?) contact fingers attached to the cap shell. While you can fix it with some contact cleaner, it won't be a permanent fix, and you don't want to go through this but once, believe me.

Instead, you will have to carefully, carefully attach some very flexible braided wire to the cap shaft near the contact finger and attach the other end to the shell itself. This will make a permanent solid ground.

You will need to do this with the cap in either the full-open or full-closed position and put in enough slack to leave a loop about half-way around the shaft. The loop must clear the cap plates, etc. as the shaft is rotated through its full range.

Once you have gotten it placed correctly, put the whole thing back together and re-install it into the radio. As I said, \*care\* is the watchword. And it surely ain't an easy task; but this fine radio is worth the effort.

Good luck, 73

Dube

AB5AP

<dube2@delphi.com>

From boatanchors@theporch.com Wed Mar 29 16:07:48 1995

Date: Wed, 29 Mar 1995 11:32:49 -0600

Message-Id: <n1415646033.67011@msmailgw1.arlut.utexas.edu>

From: "rohre" <rohre@arlut.utexas.edu>  
Subject: Source of the making your own tubes

The story about the young, penniless, new ham who made his own tubes; is one of those pieces of ham lore from the 30's which I think was first propagated in "200 Meters and Down", the early historical piece on the ARRL and the start of hamdom, by Clinton DeSoto.

A Reference to it was made in a quote attributed to Don Wallace, W6AM, early ham and prominent DX'er whose biography by Jan Perkins includes the comment.

It does raise the question I wanted to ask, how good a vacuum is needed to get a triode to operate? (As in could one home brew a vacuum pump?) And if a filament is needed for tubes to operate, by heating the cathode to emit electrons; how does a cold cathode tube work?

73, Stuart K5Kvh

From boatanchors@theporch.com Wed Mar 29 18:41:18 1995  
Date: Wed, 29 Mar 1995 14:06:39 -0600  
Message-Id: <199503292001.PAA25187@shiva.shiva.com>  
From: John Shriver <jas@shiva.com>  
Subject: Re: Source of the making your own tubes

Tubes, like light bulbs, need a damn good vacuum. You need a diffusion pump to pull it. (Which is one of those pieces of black magic I do not understand.)

From boatanchors@theporch.com Wed Mar 29 21:38:12 1995  
Date: Wed, 29 Mar 1995 17:29:18 -0600  
Message-Id: <9503292327.AA00696@kali>  
From: Andy Wallace <wallace@mc.com>  
Subject: Re: Source of the making your own tubes

Lindsay Publications used to sell a book which talked about making your own homebrew tubes, among other things (reprint of an ancient book). Unfortunately, I can't get on the darned mailing list because everytime I call their number (which IL directory assistance says is good) I either get no answer or busy. I will have to send a postcard and get back on their mailing list.....

As for cold cathodes, geez, I thought that meant that the filament was behind the cathode, and that the cathode itself was not a filament. Maybe we both need to brush up.

--Andy

From boatanchors@theporch.com Wed Mar 29 16:55:19 1995

Date: Wed, 29 Mar 1995 12:16:50 -0600  
Message-Id: <n1415643387.25576@msmailgw1.arlut.utexas.edu>  
From: "rohre" <rohre@arlut.utexas.edu>  
Subject: Techniques for replacing components

OK,

A lot of purists on here no doubt. Where I am going to base my comments is on experience in working in a Radio production repair shop line, running a medical electronics shop, and numerous years of repairing electronics from TV to industrial hardware such as a welding machine for electrically recoating Caterpiller Tractor treads!

The shops or industrial repair situations required a good repair that would last, but that would minimize the down time and the cost to repair an item. I maintain that one can cut out a component in a tight location, and get as good a mechanical joint between two leads as between a lead and a terminal lug, with minimum solder with proper fillets, and get the thing working good as new. My gosh, if someone is going to replace things with components that are not \*IDENTICAL\* to the old, like substituting Orange Drops for wax capacitors; I think I would rather be able to tell what work was original, and what aftermarket; than to subject an antique to all the mechanical stresses I have seen required to get old soldered joints at a terminal to release a wire lead. Some of those old large gauge cap leads suck the heat even from a soldering gun, and the old rosin encrusted solder does not want to melt much below the temperature of the Sun! The fork tools and the solder 'spongers' do help to wallow the old lead out, but it may break off away from the terminal anyway.

For years as a young tech, I worried this problem of trying to get all the old lead out, and not damage anything else. I think the objective is to repair and replace without doing any additional apparent, or hidden damage---like melting rubber insulation by accidentally laying an iron tip over it as you prod and wiggle the tip in a lug to get the three wrapped wire loose, etc.

Finally, after some damage and close calls, I came to the firm belief that one has to evaluate the situation in each case and use the least invasive technique to accomplish the purpose. Kind of like the view surgeons have now, that they don't have to cut you completely open to work on a tiny part of you. If you can get the whole old component out without damage to nearby ones, or risk, fine--unwrap those old leads. If things are too tight, cut the component out, make neat hooks on old and new leads and after a good mechanical crimp, solder neatly, and go on to enjoy the working of the revitalized radio. Never, in my opinion, cut one side and leave an old component hanging around to possibly cause other problems, especially in RF circuits!

If we are able to restore old BA's with exact components fine, as long as they do not risk premature damage to other working old components, such as the risk I think

everyone sees in the old type wax capacitors. One should be aware of the

hazards of certain non flameproof components, like the old cloth covered wire resistors, the ones with the color coded cloth sleeves, that would ignite when a current overload happened. I like the BA to be as original looking as possible; but recognize that the time is here, that many old style components are not available unless one has a junker chassis to rob. I have become wary of robbing one old BA or Surplus rigs to fix another, although we all have done that in the earlier days. (How I wish I had kept my Grandmother's defunct Silvertone intact!)

If one is going to replace components, and remove all traces you have been there; I think you should post a service report inside the BA, detailing what was removed, and what was substituted, so some technology archeologist of tomorrow can tell what is really old and what is not, don't you think? I like to keep a service history on my technical electronics, so I know what to stock for spares. I have a unique tube audio filter that has been in continuous service for 26 years, and we have a good idea what may fail next from the detailed service notes kept through the years.

(Used to keep all that on 3 X 5 cards, which is still a good way as any. The card can be in a main file, or an envelope on the back of the unit). Wouldn't we all like to know what work had been done on a BA before we see it?

Anyway, I was moved to comment on what at first I thought was obvious and instinctive; that the final objective is to get the BA working as well or better than new--but working and then moving on to the next challenge.

From boatanchors@theporch.com Wed Mar 29 13:08:54 1995

Date: Wed, 29 Mar 1995 08:52:51 -0600

Message-Id: <F3T84911.F3T84921@mail.admin.wisc.edu>

From: TOM.A.ADAMS@mail.admin.wisc.edu

Subject: Type 83

to: boatanchors@theporch.com

Hello Jerry.

The type 83 rectifier is a rather unique tube. It is a full wave mercury vapor tube, ergo a blue glow is perfectly normal.

Tom, K9TA

From boatanchors@theporch.com Wed Mar 29 02:06:38 1995  
Date: Tue, 28 Mar 1995 21:35:57 -0600  
Message-Id: <Pine.PCW.3.91.950328172714.7335A-100000@dip039.pixi.com>  
From: Dave Creek <dcreek@pixi.com>  
Subject: Re: Type 83A Tube

>From memory this is a mercury vapor rectifier and was used in several tube testers including the military TV-2. When operating properly, it should have a bright blue glow due to the ionization of the mercury vapor. I don't think these tubes were gettered, since they contained a low pressure mercury vapor. I remember seeing small droplets of mercury inside the tube when it was cold.

Dave Creek, NH6BA  
Ewa Beach, HI

> Yesterday, I was asked to test a type 83A full wave rectifier from a Stark  
> transconductance type tube tester because the meter readings were abnormally  
> low. Visually, the material deposited by the getter appeared to be most  
> missing, so I assumed that air had gotten into the envelope. There is  
> also a second 'ring' style getter whose purpose is unknown to me. There  
> was no manesium deposit opposite this ring.  
>  
> When I tested the tube on my Heathkit emission tester, each section tested  
> OK, however each section had a blue glow between the filament and the plate.  
> Since I don't have any listing for an 83A rectifier or a spare, I can't tell  
> if it's a gas filled tube or if it's truly defective.  
>  
> Can anyone confirm my hypothesis?

From boatanchors@theporch.com Wed Mar 29 10:16:41 1995  
Date: Wed, 29 Mar 1995 06:04:43 -0600  
Message-Id: <9503291202.AA28517@postoffice.rfc.comm.harris.com>  
From: emg@rfc.comm.harris.com  
Subject: Re: Type 83A Tube

The type 83 is a mercury vapor rectifier, the blue glow between the filament and the plate is normal (and necessary !). 73 Ed K2MP

From boatanchors@theporch.com Wed Mar 29 14:35:46 1995  
Date: Wed, 29 Mar 1995 10:12:21 -0600  
Message-Id: <199503290726.BAA27471@zoom.bga.com>  
From: Henry van Cleef <vancleef@bga.com>  
Subject: Re: Type 83A Tube

As jproc@worldlinx.com said  
>

> Dear BA's,  
>  
> Yesterday, I was asked to test a type 83A full wave rectifier from a Stark  
> transconductance type tube tester because the meter readings were abnormally  
> low. Visually, the material deposited by the getter appeared to be most  
> missing, so I assumed that air had gotten into the envelope. There is  
> also a second 'ring' style getter whose purpose is unknown to me. There  
> was no manesium deposit opposite this ring.  
>  
> When I tested the tube on my Heathkit emission tester, each section tested  
> OK, however each section had a blue glow between the filament and the plate.  
> Since I don't have any listing for an 83A rectifier or a spare, I can't tell  
> if it's a gas filled tube or if it's truly defective.  
>  
An 83 is a mercury vapor rectifier, like an 816 or an 866.

An 83-V is a high-vacuum heater-cathode type replacement for the 83.  
The same tube is available with octal base as a 5V4.

--

\*\*\*\*\*  
Hank van Cleef vancleef@bga.com vancleef@tmn.com  
\*\*\*\*\*

From boatanchors@theporch.com Wed Mar 29 21:36:49 1995  
Date: Wed, 29 Mar 1995 17:26:41 -0600  
Message-Id: <9503292323.AA00693@kali>  
From: Andy Wallace <wallace@mc.com>  
Subject: what, no soldering guns?

Actually, Hank, that soldering gun could come in handy when you need to unsolder something BEEEEEG from a chassis. I had a 2M converter where the original output was an RCA jack, and some person had soldered a bulkhead-mount BNC there. It took me a LONG time with my 40W or so iron and a pair of heavy pliers to remove the BNC. I wound up drilling out the guts and just working at the rest. I didn't damage the chassis but I sure wished I had a gun. I picked up a 250W gun at one of last year's fleas, and now I'm prepared for the next time. :-)

--Andy

P.S. I just got an AES flyer and it shows the repro DeForest Audion for \$300. Better get your beer bottles vacuumed out!

They also sell Dave Ishmael's Electric Radio article collection, but they attribute it to ANTIQUE RADIO. Argh.

From boatanchors@theporch.com Wed Mar 29 13:06:15 1995

Date: Wed, 29 Mar 1995 08:45:46 -0600  
Message-Id: <"Macintosh \*/PRMD=MOT/ADMD=MOT/C=US/"@MHS>  
From: Scott\_Johnson-AZAX60@email.sps.mot.com  
Subject: WTB- ARC-1 control box

Subject: Time: 7:41 AM  
OFFICE MEMO WTB: ARC-1 control box Date: 3/29/95  
I am looking for the control box for an ARC-1 VHF transceiver, any leads would  
be appreciated. I have loads of test equipment for trade.  
73, Scott KC7BGE

From boatanchors@theporch.com Wed Mar 29 02:14:33 1995  
Date: Tue, 28 Mar 1995 21:57:29 -0600  
Message-Id: < Pine.3.89.9503281919.A20895-0100000@netcom12 >  
From: paul Veltman < veltman@netcom.com >  
Subject: Re: your technique???

John,  
I remove the component, one lead at a time, with the solder sucker or  
wick, depending on how the component is mounted, and then solder in the  
new one.

73

Paul WA6OKQ

From boatanchors@theporch.com Wed Mar 29 02:33:11 1995  
Date: Tue, 28 Mar 1995 22:11:04 -0600  
Message-Id: < Chameleon.4.01.2.950328223711.jproc@ >  
From: jproc@worldlinx.com  
Subject: RE: your technique???

>  
> I'd like to hear your methods, and reasoning behind those methods,  
> for component replacement in old gear. Do you attack with solder sucker  
> and wick, and replace parts in their entirety? Do you snip leads above  
> the old joint, form loops and splice new parts in? Lift only one leg  
> of the old part and parallel a new one in?  
>  
> Comments please?  
> /john  
>  
>  
>  
>

> John M. Brewer      wb5oau  
> johnb@thelair.zynet.com  
>

John,

There are TWO rules that I follow when repairing equipment.

RULE # 1 - DISTURB AS LITTLE AS POSSIBLE.

When working on old gear, some of the material such as rubber insulation on wires may become brittle and flake off. Cotton covered wiring harnesses which have been tropicalized may break when disturbed. If a component is soldered to a terminal board and is within easy reach, I remove the defective component and its leads. If it's in a difficult location, I leave behind part of the original component leads and form hook ends to mate with similar hook ends formed on the component.

RULE # 2 - MAKE IT TECHNICALLY SOUND

Never leave one end of a component attached to a live circuit. In the case of RF circuits, this may cause the circuit to stop operating. When replacing components in RF circuits, dress the leads to exactly the same length as the original and orient the component in the same manner as the original.

Regards,

-----  
Jerry Proc VE3FAB  
E-mail: jproc@worldlinx.com  
Radio Restoration Volunteer  
HMCS Haida Toronto, Ontario

From boatanchors@theporch.com Wed Mar 29 03:30:09 1995  
Date: Tue, 28 Mar 1995 23:19:51 -0600  
Message-Id: <9503290512.AA22205@uvs1.orl.mmc.com>  
From: padgett@tccslr.dnet.mmc.com (A. Padgett Peterson, P.E. Information Security)  
Subject: RE: your technique???

> I'd like to hear your methods, and reasoning behind those methods,  
>for component replacement in old gear. Do you attack with solder sucker  
>and wick, and replace parts in their entirety?

Always thought any other method was untidy. Can see how these minature  
suckers that seem popular at flea markets could tempt people into sloppy

habits. Mine is close to a foot long and works.

When I leared, it was "first make a strong mechanical connection, then solder it" and if the old component or lead is still in the hole, this is a bit difficult.

Warmly,  
Padgett

From boatanchors@theporch.com Wed Mar 29 11:02:45 1995  
Date: Wed, 29 Mar 1995 06:54:51 -0600  
Message-Id: <Pine.3.89.9503290719.A279-0100000@indy2>  
From: "Roberta J. Barmore" <rbarmore@indynet.indy.net>  
Subject: Re: your technique???

Hi!

On Tue, 28 Mar 1995 johnb@thelair.zynet.com wrote:

> I'd like to hear your methods, and reasoning behind those methods,  
> for component replacement in old gear. [...]

I remove the old part, 100%, using solder sucker (a small one, btw), usually a smallish Weller pencil (very rarely, a old-fashioned gun) and a desoldering spike/fork widget (the handiest gadget ever invented!). Where a component lead is used to connect the mounting terminal to yet another terminal, it is usually retained, "fixing" the wrap as needed. Tweezers, a clean "flux brush" and a small hose adapted to a shop-vac are used to clean up bits of wire and the small bits of solder and flux that inevitably collect in the chassis. (Which I usually prop vertically rather than horizontally--it's easier to get at and the flotsam and jetsam can't hide as well). \*Good\* needle-nose pliers are useful for wrapping and clinching the new leads, which is very helpful in getting a gas-tight joint. (That, folks, is the whole aim of soldering, crimping, or whatever; and it's why some people have trouble with PC-boarded construction--there's several tricks to making \*those\* connections gas-tight! It's also why the OTs make such a fuss over getting a good mechanical joint in point-to-point wiring, whether they knew it or not).

This is precisely the same technique I use in fixing things at work, too. The ideal repair (IMNSHO) is one that doesn't appear to have been done. If you look under the chassis of my (very clean to begin with, thanks Joe!) HRO-5TA, it generally appears to have been \*built\* with polyfilm and "orange drop" condensers and newer resistors. (Though most of the latter are carbon-composition; I still remember how easily the ends came off the early carbon-film ones!)

Tacked-on parts, "spliced" leads and huge globby solder joints are just trouble waiting to happen. There's no excuse for it. It takes only time

and patience to do a neat job of things; no fancy or expensive tools are required.

In doing the HRO, I very rarely needed the soldering gun--the 25W (or even less, can't recall and it's at home) pencil did a perfectly fine job, though it required frequent cleaning as the anti-fungal gunk collected on the tip. ...Which is why a cheap iron is a better choice than a fancy soldering station: you can \*file\* the solid-copper tip of the cheap ones if need be, a process that will destroy the plated-iron tip of a WTCP-series iron. The iron I use is almost throwaway-cheap, so wicked tricks like prying with the tip are acceptable! In retrospect, a tin of flux would have helped but I don't know if I'd advise folks to just go get some and leap in; it takes practice and glopping it on \*really\* makes a mess.

73,  
--Bobbi

From boatanchors@theporch.com Wed Mar 29 12:33:16 1995  
Date: Wed, 29 Mar 1995 08:02:14 -0600  
Message-Id: <Chameleon.4.01.950329085351.dgibbs@meninx.ppp.verdix.com>  
From: "R. Dennis Gibbs" <dgibbs@rational.com>  
Subject: RE: your technique???

There is a question I have along these lines as well:

What if a given component that has failed would be \*extremely difficult\* or disruptive to remove and replace entirely? I have some resistors to replace on a radio, and I'm very tempted to just clip out the resistor portion and connect the new resistor to the remaining leads left from the old resistor.

I'm afraid that completely removing the old leads as well will not only be difficult, but may damage other components in the process.

So my question is, just how bad is it if I clip out the old resistor, and solder the new one to the old leads? Of course, I would make a good mechanical connection to the old leads before soldering.

What is the consensus?

Dennis

>> I'd like to hear your methods, and reasoning behind those methods,  
>>for component replacement in old gear. Do you attack with solder sucker  
>>and wick, and replace parts in their entirety?

>

>Always thought any other method was untidy. Can see how these minature

>suckers that seem popular at flea markets could tempt people into sloppy  
>habits. Mine is close to a foot long and works.

>

From boatanchors@theporch.com Wed Mar 29 14:47:16 1995

Date: Wed, 29 Mar 1995 10:14:53 -0600

Message-Id: <199503290759.BAA22858@lia.bga.com>

From: Henry van Cleef <vancleef@bga.com>

Subject: Re: your technique???

Subject: Re: your technique???

To: johnb@thelair.zynet.com

Date: Wed, 29 Mar 1995 01:57:25 -0600 (CST)

In-Reply-To: <Pine.LNX.3.91.950328085828.16300A-100000@thelair.zynet.com> from  
"johnb@thelair.zynet.com" at Mar 28, 95 10:04:48 am

X-Mailer: ELM [version 2.4 PL23]

Content-Type: text

Content-Length: 2899

As johnb@thelair.zynet.com said

>

>

> I'd like to hear your methods, and reasoning behind those methods,  
> for component replacement in old gear. Do you attack with solder sucker  
> and wick, and replace parts in their entirety? Do you snip leads above  
> the old joint, form loops and splice new parts in? Lift only one leg  
> of the old part and parallel a new one in?

>

Huh?

Remove the old part completely and replace it with a new one. I recall  
reading a "Mac's Service Shop" article in the old Radio News (before it  
became Radio and TV News) that was highly critical of anything else.  
That would have been around fifty years ago.

Tools? I have a temp controlled 35/45-watt iron, also uncontrolled 55  
and 200-watt irons. I do not use a loop-type "gun" tool. These were  
all the rage about 1948, and were terrible tools---a pencil-type tool  
is much better, temp control almost mandatory if you are going to do  
any kind of serious work.

Add to that good spring-loaded pump-type solder sucker, some  
soldering aids with various tips (including one filed to a point), long  
skinny needle-nosed pliers, hemostats, and a magnifying glass for close  
inspection.

When replacing a component such as a lug-type electrolytic or

transformer with a lead-type, I put in terminal strips as needed. If you can't find something to mount it to, and don't like drilling a hole in the chassis, you can always solder it to the chassis (that's what the 200-watt iron is for). Paste-ups and leads wrapped in tape with components floating around are bad news.

Leaving old components hanging in circuits is bad news---in a lot of radios you need the space, and they can float around, touch things, or screw up tuning and Q, pick up hum, etc.

When I remove an old component, I always check its circuit function first, and verify that the value I am installing makes sense for the function. I've seen too many resistors that had brown multiplier bands from overheating that were supposed to have red or orange multipliers. I've also found repairs done with wrong value components often enough that I inspect everything in the radio. Also have found unsoldered and cold solder connections that were in the radio from day one.

Some people get all funny if you replace wax paper condensers with mylars, etc. I get all funny when I see schlock workmanship. However, if you are using small modern components to replace long fat old ones, make sure to pick appropriate ground points for the grounded components. Running a mylar with inch-and-a-half leads between a screen or cathode and a ground just because the old wax paper job was that long makes no sense, and if there is a closer ground lug, I'll use it.

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Hank van Cleef vancleef@bga.com vancleef@tmn.com  
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From boatanchors@theporch.com Wed Mar 29 16:56:00 1995  
Date: Wed, 29 Mar 1995 12:34:36 -0600  
Message-Id: <199503291832.KAA19121@hobbes.UCSC.EDU>  
From: haynes@cats.ucsc.edu (Jim Haynes)  
Subject: Re: your technique???

I'm eager to learn in this area too, I'm sure my own technique is not the best.

That said, I must add that you often find the original component with leads through the holes, and some other leads in the same holes that you aren't trying to take out, and all the leads wrapped around the pin and that sort of thing. It's the "firm mechanical connection before soldering" If you try to do a neat job of replacing in a situation like this you are likely to do a lot of damage with all the heating and pulling it takes to

get the old leads out. Also you may be in a situation where the chassis is deep and the component you are trying to replace was one of the first ones put in, and then others were put in afterward in additional layers so you don't have good access to the first layer. So you may find it highly advisable to just clip the leads of the old part and do what you can to get the replacement connected.

Another thing is I remember a magazine article from long ago with the title "solder is strong enough". It basically said that making a strong mechanical connection before soldering is a piece of folk wisdom that was very necessary in the early days, but with modern (circa 1955) solders it wasn't necessary and made repairs harder. Now obviously there is a need for judgement here. If you have a 0.1uf capacitor supported by its leads, and you're running the rig in a car or airplane, then you are going to have a lot of stress on the joints as the mass of that thing vibrates. But if it's a 1/2 watt resistor or a piece of hookup wire there isn't much mass to vibrate and stress the connection.

With stuff on PC boards I always use the solder sucker and put the replacement parts in the original holes. But I remember some equipment from the late 1950s where the manufacturer's instruction was to cut off the component leads and bend them up and wrap the new component leads around the cut off ones, rather than trying to remove the originals from the PC board. So I guess with the older PC board materials there was more of a problem with the foil coming off (and solder suckers hadn't been invented yet).

From boatanchors@theporch.com Wed Mar 29 18:07:26 1995

Date: Wed, 29 Mar 1995 13:58:24 -0600

Message-Id: <9503291946.AA07483@orion.crd.ge.com>

From: mallick@orion.crd.ge.com (John Mallick)

Subject: your technique???

From: haynes@cats.ucsc.edu (Jim Haynes)

..stuff deleted...

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I remember a Pop'tronics article about repairing resistors on those old phenolic PC boards. First, you'd \*crush\* the resistor with a pair of pliers; then you'd use a little tool to curl up the remaining leads in a

little spiral; finally, you'd insert the new resistor leads into the spirals and solder. After watching the some traces on an old PC board come off with the application of an iron, I can see why the technique was developed. I guess now it's just another "lost art".

73, John WA1HNL

From boatanchors@theporch.com Wed Mar 29 20:55:45 1995  
Date: Wed, 29 Mar 1995 16:54:19 -0600  
Message-Id: <Pine.3.89.9503291639.A5741-0100000@ozarks>  
From: "C. Frank Gilmore" <fgilmore@ozarks.sgcl.lib.mo.us>  
Subject: Re: your technique???

Used to be when you bought a box of Sprague condensers (will always be that to me) you got a handful of cute little coils of wire with solder on them....looked sort of like a small spring. You just clipped leads, slipped on end on, stuck the part in the other and gently touched the iron to it. Worked great. Some smart feller may have gotten rich off that idea....but we don't see them anymore. Course they don't call them condensers anymore either.

de K0JPJ ex-W5PVX . . . . -

On Wed, 29 Mar 1995, John Mallick wrote:

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>  
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